

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Yeoh et al.
Application No.: 10/615,088
Filed: 07/08/2003
Examiner: David P Rashid
Art Unit: 2624
Confirmation No.: 8691
Title: **Electronic Image Registration Based On
Chrominance Channel**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

RESPONSE TO RESTRICTION REQUIREMENT

In response to the requirement for restriction and election mailed September 19, 2007, Applicants provisionally elect claims 1-10 with traverse. Reconsideration and withdrawal the requirement is hereby requested for the reasons set forth below.

The Examiner stated that the claims of the application are drawn to:

Species I (claims 1-10) directed to electronic registration using chrominance value channel comparison; and

Species II (claims 11- 18) directed to electronic registration using edge channel detection.

which, according to the Examiner, are independent or distinct because claims to the different species recite mutually exclusive characteristics. The Examiner also stated that the species are not obvious variants of each other based on the current record.

Applicants first note that there appears to be an error in the Examiner's description of claim 11 and its dependent claims. Claim 11 recites a method of electronic registration using multiple channels, which includes performing an edge detection operation. Neither claim 11 nor any claims dependent thereon recite the use of "edge channel detection."

Originally filed claim 1 and thus, dependent claims 2-10, are to a method of automatically detecting registration parameters for a selected backing surface. The claims include: receiving image data comprising a representative sample of the backing surface, with the image data including (but not being limited to) chrominance values in multiple channels for selected pixel locations along a scanline; determining average chrominance values for each of the multiple channels; selecting a registration channel based on the average chrominance values; and determining a chrominance deviation for the registration channel. Registration parameters are then calculated based on the average chrominance value and the chrominance deviation of the registration channel.

As explained in the specification, the method may be used for edge detection operation based on the identification of "black-to-white" and "white-to-black" transitions, in which case, the registration parameters will typically include a black level threshold for identifying pixels that lie outside the document edges, a white level threshold for identifying pixels that lie within the document edges, and a Step Change Register (SCR) for determining when the difference between pixel values should be treated as an edge [see e.g., ¶0020].

Originally filed claim 11, and thus, dependent claims 12-18, recite electronic registration using multiple channels- one of many possible uses for systems and

methods disclosed in the present application. Like claim 1, the methods recited in claim 11 and its dependent claims include receiving image data for multiple channels. However, claim 11 recites receiving image data that is "scanned" and thus, includes a plurality of scanlines with each scanline including pixel data for selected locations along the scanline. Further, while present systems and methods may generally be used to identify characteristics that are identifiable by gray level differences, claim 11 is directed to detecting a document edge.

Accordingly, the claims to the species defined by the Examiner are not directed to mutually exclusive characteristics and Applicants respectfully request withdrawal of the requirement for election and restriction.